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Chris Heunen and **Manuel L. Reyes*** (reyes@bowdoin.edu), Bowdoin College, Department of Mathematics, 8600 College Station, Brunswick, ME 04011. *Diagonalizing matrices over AW*-algebras.*

AW*-algebras are C*-algebras that are endowed with an abundant supply of projections (self-adjoint idempotent elements). We prove that if A is an AW*-algebra, then any commuting set of normal $n \times n$ matrices over A is simultaneously diagonalizable. A key tool that is used in the proof is a new dimension theory for properly infinite projections in an AW*-algebra. (Received February 10, 2013)